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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/595,886	05/18/2006	Hyo-Chung Lee	406-0008	8580
22511	7590	02/25/2009		
OSHA LIANG I.L.P. TWO HOUSTON CENTER 909 FANNIN, SUITE 3500 HOUSTON, TX 77010			EXAMINER GREECE, JAMES R	
			ART UNIT 2873	PAPER NUMBER
			NOTIFICATION DATE 02/25/2009	DELIVERY MODE ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

docketing@oshaliang.com

buta@oshaliang.com

Office Action Summary

Application No.

10/595,886

Applicant(s)

LEE ET AL.

Examiner

JAMES R. GREECE

Art Unit

2873

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on 10 November 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 24-48 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 40-44 is/are allowed.
- 6) ☒ Claim(s) 24 and 45-47 is/are rejected.
- 7) ☒ Claim(s) 25-39 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 May 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
 2. Ascertaining the differences between the prior art and the claims at issue.
 3. Resolving the level of ordinary skill in the pertinent art.
 4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
3. Claims 24 and 45-47 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hyatt (USPAT 4,342,906).

Re claim 24, Hyatt teaches, an input/output interface unit exchanging the lens driver control signal and status information of the liquid-filled lens with the image signal processor according to a certain signal transmission protocol; (for details see at least numeral 251) a system clock generation unit for generating a system clock; (for details see at least col. 8, lines 3-17) a high voltage generation unit for generating high voltage, which can drive the liquid-filled lens, using low voltage of a battery (for details see at least col. 41, lines 63-66) of a mobile information terminal; (for details see at least numeral 239) a voltage generation unit for providing reference voltage and bias voltage for operating the liquid-filled lens driver; (for

details see at least col. 34, lines 37-48) a drive signal generation unit for generating a final drive signal for the liquid- filled lens by generating an output waveform for driving the liquid-filled lens and boosting the output waveform to a high voltage level generated by the high voltage generation unit; (for details see at least col. 11, lines 1-21) and a control unit for controlling the function units so that they can drive the liquid- filled lens (for details see at least col. 11, line 22).

But, Hyatt fails to explicitly teach the intended use of this technology for a liquid lens driver.

However the Hyatt reference provides the suggestion that the particular circuit and voltage altering technology could be applied to driver technology for shutters. Given this fact and that the device of Hyatt would provide the predictable result of a more precise driver for a lens that would allow for more portability, it would have been obvious to one having ordinary skill at the time the invention was made to employ the device of Hyatt to drive a liquid lens. Further as there are a limited number of drivers available to drive a liquid lens it would be within routine experimentation and obvious to try any of these methods in order to drive a liquid lens.

Re claim 45, Hyatt teaches, a drive signal clock generation module for generating a drive clock in a waveform period of a signal for driving the liquid-filled lens; (for details see at least col. 8, lines 3-17) a low voltage differential signal generation module for generating two low voltage differential signals having a voltage level of a battery of the mobile information terminal based on the drive clock; (for details see at least col. 8, lines 3-17) and a high voltage differential signal generation module for generating plus and minus differential drive signals, that is, the

final drive signal for the liquid-filled lens, by increasing a voltage amplitude of the low voltage differential signal to a level of the high voltage generated by the high voltage generation unit (for details see at least numeral 239)

But, Hyatt fails to explicitly teach the intended use of this technology for a liquid lens driver.

However the Hyatt reference provides the suggestion that the particular circuit and voltage altering technology could be applied to driver technology for shutters. Given this fact and that the device of Hyatt would provide the predictable result of a more precise driver for a lens that would allow for more portability, it would have been obvious to one having ordinary skill at the time the invention was made to employ the device of Hyatt to drive a liquid lens. Further as there are a limited number of drivers available to drive a liquid lens it would be within routine experimentation and obvious to try any of these methods in order to drive a liquid lens.

Re claim 46, Hyatt further teaches, wherein the drive signal clock generation module generates a plurality of clocks having various frequencies so that the low voltage differential signal generation module can selectively use an optimal differential signal period for driving the liquid-filled lens (for details see at least numerals 208 and 215).

Re claim 47, Hyatt further teaches, wherein the liquid-filled lens is operated in a differential signal manner by connecting a first of plus and minus drive signals to a first terminal of the liquid-filled lens and a second of the plus and minus drive signals to a second terminal of the liquid-filled lens (for details see at least col. 34, lines 3-11).

Claim Objections

4. Claims 25-39 and 48 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

5. The following is a statement of reasons for the indication of allowable subject matter: The prior art taken singularly or in combination fails to anticipate or fairly suggest the limitations of the independent claims, in such a manner that a rejection under 35 U.S.C. 102 or 103 would be proper.

In regard to dependent claims 25-39, the prior art taken either singly or in combination fails to anticipate or fairly suggest a liquid filled lens driver combining the structural and operational features of the combined claims; recited together in combination with the totality of particular features/limitations recited therein.

Allowable Subject Matter

6. Claims 40-44 are allowed.

7. The following is a statement of reasons for the indication of allowable subject matter: The prior art taken singularly or in combination fails to anticipate or fairly suggest the limitations of the independent claims, in such a manner that a rejection under 35 U.S.C. 102 or 103 would be proper.

In regard to independent claim 40, the prior art taken either singly or in combination fails to anticipate or fairly suggest a high voltage generation circuit for generating high voltage to drive a

liquid filled lens including the particular structure/features as cited; recited together in combination with the totality of particular features/limitations recited therein.

Cited Prior Art

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- a. Hyatt (US 3986022 A) is cited to show a voltage adaptive circuit in the art.
- b. Hyatt (US 4034276 A) is cited to show a voltage adaptive circuit in the art.
- c. Hyatt (US 4739396 A) is cited to show a voltage adaptive circuit in the art.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JAMES R. GREECE whose telephone number is (571)272-3711. The examiner can normally be reached on M-Th 7:30-6.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ricky Mack can be reached on 571-272-2333. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/J. R. G./
Examiner, Art Unit 2873

/Joseph Martinez/
Primary Examiner, Art Unit 2873